

ACKNOWLEDGEMENTS

Project Team: Natural Resources Services Division of RCAA: Chris Lohoefener, Projects Coordinator, Noelle Melchizedek, Planning Specialist, Nicole Nada, Projects Coordinator, Georgia Trehey, GIS Technician, and Jennifer Rice, Co-director; Humboldt Bay Harbor Recreation and Conservation District: David Hull, Executive Director, Adam Wagschal, Director of Conservation, and Mike Wilson, Harbor Commissioner.

Project Collaborators: Many thanks for invaluable guidance, advice, and review of this project, particularly: State Coastal Conservancy; California Department of Fish and Game; County of Humboldt Public Works; the Cities of Arcata and Eureka; Eric Nelson and the Humboldt Bay National Wildlife Refuge; Denise Homer and the Arcata Marsh and Wildlife Sanctuary; Dave Nakamura and Humboldt State University's Center Activities; Troy Nicolini from NOAA and the Humboldt Bay Water Safety Coalition; Explore North Coast Paddler's Association; Jim Clark from the Audubon Society; David Fix, author of *Birds of Northern California*; Kayak Zak's; California Boating and Waterways; Washington Water Trails Association; the Morro Bay National Estuary Program; the Elkhorn Slough National Estuarine Research Reserve; local members of the California Waterfowl Association; and Coast Seafoods and the Humboldt Bay Oyster Company.

TABLE OF CONTENTS

I. Introduction	1
A. Project Description	1
II. Sensitive Resources	2
III. Interpretive Materials and Signage	4
A. Draft Water Trails Interpretive Sign	4
B. Directional/Roadway Signage Plan	5
C. Draft Water Trails Map & Guide	
IV. Prioritizing Access Sites	
A. Site Assessments	
B. Interested Landowners/Managers	
C. Public Priorities	
D. Geographic Location	
E. Americans with Disabilities Act (ADA): Accessibility	
F. Variety of Launches	
G. Potential for Sensitive Resource Impacts	
V. Phase I Priority Access Site Improvement Recommendations	
A. Arcata	
B. Samoa Boat Ramp County Park	
C. Woodley Island	
D. Fields Landing County Boat Ramp	
E. Hookton Slough	
VI. Future Water Trail Projects and Opportunities	
A. Access Sites	
Elk River Wildlife Sanctuary	
Humboldt Bay Rowing Association/HSU Crew Dock	
Mad River Slough	
Park Street/Target Site Boat Launch/Northcoast Regional Land Trust	
Manila Community Park	
B. Regional/Bay-Wide Water Trails Projects	
Regional Water Trails Plan	
Camping	
Bay-wide Channel Markers	
Non-motorized Boating Website	
VII. Permitting and Construction Costs	
A. Permitting	
B. Construction	
C. VIII. Potential Funding Sources	
D. IX. References	
X. Appendices	36
A. Sensitive Resources Impact Assessment	
B. Interpretation Materials	
Bay Sign	
Directional Signage Plan	
Map and Guide	
C. Site Assessments	
D. Public Outreach – Humboldt Bay Symposium and Stakeholder Presentation	
E. Online Survey and Results	
F. Construction Cost Estimates	

I. Introduction

Humboldt Bay, on the central coast of Humboldt County in northwestern California, is one of the largest bays on the Pacific Coast. This unique and scenic bay consists of three parts; Arcata Bay in the north, Entrance Bay in the middle, and South Bay. Arcata Bay, the largest, is wide and shallow, as is the South Bay – both areas experience relatively light boat traffic. Connecting Arcata and South Bay, the central portion has a narrower and deeper channel and hosts most of the commercial boating traffic. It also leads to the mouth of Humboldt Bay. In addition, Mad River, Freshwater, Elk River and Hookton (Salmon Creek) Sloughs offer some of the most scenic for paddle and recreational boating experiences on the west coast.

In the 2001 *Humboldt Bay Trails Feasibility Study*, funded by the State Coastal Conservancy (SCC) and completed by the Natural Resources Services Division (NRS) of Redwood Community Action Agency, a need for a Humboldt Bay Water Trails Program was identified. "Water trails" are water-based routes for non-motorized boaters that are anchored by land access (or 'put-in' and 'take-out') sites. These general routes provide educational and scenic experiences and are design to accommodate boaters of all ages and abilities. The report specifically identified a need for general non-motorized boating improvements, creation of a *Humboldt Bay Water Trails Map and Guide*, and the need for directional and interpretive signage. More recently, the Humboldt Bay Harbor, Recreation and Conservation District's (HBHRCD) Humboldt Bay Management Plan specifically recognizes the importance and desirability of an integrated water trail system and contains policies intended to develop such a system.

In 2006, the State Coastal Conservancy awarded NRS and the HBHRCD grant funding to pursue the first phase of a *Humboldt Bay Water Trails Implementation Program* (WTP), and to develop design components for specific site improvements, interpretive and directional signage, and a bay-wide Map & Guide. The following report details the findings and recommendations.

A. Project Description

Humboldt Bay presents many opportunities for non-motorized boaters, including views of wildlife, scenic vistas, observation of maritime activity, fishing, hunting, exercise, an alternate way to travel to waterfront destinations, and accessible, yet "wild" experiences. However, there are many challenges facing the uninformed boater. Limited public access facilities; limited public information about other Bay use patterns, such as motorized commercial and recreational boating, hunting, fishing, and other paddle boating activities; rapidly changing water levels, bay currents and wind, extensive mudflats, sensitive resources and other competing uses are prevalent issues throughout the bay.

Despite these challenges, both local and visiting recreational boaters increasingly use Humboldt Bay. Though potential paddling opportunities abound, safe, user-friendly access to the bay for paddlers is limited. Currently, only three locations on Humboldt Bay are designed specifically for canoe and kayak access: the Hookton Slough dock in the south bay, the Adorni dock on the Eureka waterfront, and the HSU Crew/Humboldt Bay Rowing Association (HBRA) dock, also on the Eureka waterfront. As a result, many paddlers utilize a number of unofficial access points. Problems with use of unofficial sites include trespassing on private land; unsafe or inadequate parking; unsafe or inadequate boat-launching facilities; and disturbances to sensitive shorelines.

There is also limited information available for paddlers about tide-based trip planning, water safety, wildlife viewing protocol, and concurrent uses (both commercial and recreational) they may encounter on the bay – and almost none of the existing information is posted at access sites. Much of the bay is very shallow, and becomes exposed mudflats at lower tides. A tidal drop of just an inch or two can strand the unwary boater on mudflats that are too soft to be considered "walkable." The force of tidal currents and wind can

1

also be significant, even in the upper reaches of the sloughs. It is very important for boaters to know where channels are located, understand tidal influences, prevailing wind directions and how to avoid potential conflicts with larger vessels and other recreationists.

The abundance of wildlife also creates the potential for harmful disturbance by paddlers if they are not informed about appropriate wildlife viewing behavior. Shorebirds and waterfowl, harbor seals, sea lions, eelgrass habitats and other sensitive species exist in large numbers throughout the Bay and are equally subject to disturbance by uninformed paddlers.

Humboldt Bay is a multi-use bay. In addition to paddlers and wildlife, recreational power and sail boaters, commercial fishermen and fishing vessels, various government and law enforcement vessels, tour operators, deep-draft commercial ships, waterfowl hunters, and mariculture and aquaculture operators also use Humboldt Bay. Uninformed paddlers can inadvertently put themselves in potentially dangerous situations by being unaware of these other uses or by not using prudent safety precautions.

With these considerations in mind, the first phase of the WTP emphasized improving access for small, human-powered boats that can be hand-carried to and from launch sites (primarily canoes and kayaks). With extensive participation from local agencies, paddling organizations and the general public, the WTP resulted in:

- 1) Recommended plans and designs for both site amenities (such as parking, etc.) and ramp/dock improvements for a number of existing water access facilities;
- 2) Identification of necessary permits and potential funding sources for Phase I recommendations; and,
- 3) Development of interpretive resources for non-motorized boaters.

A Sensitive Resource Impact Assessment, draft designs of interpretive signage and the *Humboldt Bay Water Trails Map & Guide*, and implementation measures for priority access sites are presented in this report. Constraints and opportunities for other potential water trail improvements area also discussed.

II. SENSITIVE RESOURCES

The project team recognizes that an increase in paddling activities through development of a Water Trails project has the potential to have negative impacts on biological and water resources. At the same time, it is important to remember that without a comprehensive program in place, paddling activities could potentially have greater adverse impacts due to a lack of information, education, and appropriate facilities.

The initial task of the WTP was to develop a Sensitive Resource Impact Assessment, in which historical and cultural sites, wildlife and habitats, and a variety of other considerations were documented and analyzed with respect to increased non-motorized boating use of Humboldt Bay. These resources were identified by the following methods:

- Review of local plans;
- Review of state and federal databases;
- A workshop to solicit information from biologists and resource managers on sensitive wildlife and plant species locations; and
- Compilation of digital data sets to prepare GIS maps of sensitive resource locations and potentially sensitive foraging and nesting habitats. Data sets included:
 - o California Department of Fish and Game (CDFG) personal communication;

- o CDFG California Natural Diversity Database (CNDDB) RareFind 3 (2007);
- o CDFG California Wildlife Habitat Relationships (CWHR) Database;
- o California Native Plant Society (CNPS) Rare and Endangered Plant Inventory;
- o Humboldt Bay Harbor Recreation and Conservation District (2007);
- o Humboldt State University (HSU) personal communication;
- o National Oceanic and Atmospheric Administration (NOAA); and,
- o United States Fish and Wildlife Service (USFWS).

The CNDDB and CNPS inventory were queried for Humboldt Bay in October 2007. The Eureka 7.5 minute USGS quadrangle and eight adjacent quadrangles (Arcata North, Arcata South, Cannibal Island, Fields Landing, McWinney Creek, and Tyee City) were included (two quadrangles fell in the Pacific Ocean). Listed bird and fish species that were not in the query, but have known occurrences in Humboldt Bay (e.g. brown pelican nesting population) were added to the list of species addressed in this report. Species that were on the query that there is no habitat for in the project area (e.g. douglas fir forest for the Sonoma tree vole) were taken off the list of species addressed with consultation from a wildlife biologist and botanist.

Areas of cultural significance were identified through the Wiyot Tribe Cultural Resource Specialist and researching local planning documents. (Note: If the project involves any ground disturbing activities and permits, implementers will be required to conduct a records search at the North Coast Information Center in Klamath for the recorded sites in the area(s) of concern.)

General information regarding sensitive habitat concerns was obtained from the *Background Report on Wildlife, Habitat and Water Quality Issues*, 2006, the San Francisco Bay Conservation and Development Commission's (BCDC) comprehensive report regarding potential impacts from the San Francisco Bay Water Trail.

Sensitive sites, wildlife, plants, and habitat were identified and mapped. Special status species as well as critical seasonal periods were identified, and general management guidelines and permits are discussed to lessen negative impacts. The threat to native species from invasive and nuisance species was noted in the Sensitive Resources Impact Report. As invasive species can "hitchhike" on clothing, boats, and other equipment, it is very important to emphasize the cleaning and/or decontamination of boats before and after launching. Of particular note is Japanese Eelgrass in Humboldt Bay and the recent discovery of New Zealand Mud Snails in Big Lagoon. Finally, a series of mitigation measures to reduce or eliminate negative affects of increased paddling access on Humboldt Bay were described in the report.

The project team incorporated specific information about sensitive species into the *Humboldt Bay Trails Map and Guide* as well as on the WTP interpretive sign to educate paddle boaters about ways in which to lessen the impact of their activities to sensitive species and habitats. Interpretive materials also provide educational information to paddle boaters about invasive species and measures to prevent their spread. Sensitive resource information was also used to determine the initial feasibility and location of improvements to priority access sites. See Appendix A for the full report.

Potential Next Steps

While there has been research on the impacts of non-motorized boating to sensitive species elsewhere in the country, no such study has been undertaken in Humboldt Bay. Given the Bay's location along the Pacific Flyway and the amount of sensitive species and habitat identified in the Sensitive Resource Impact Assessment, the WTP recommends further research on the potential impacts that non-motorized boating

can have on the Bay's resources. Such information would help inform future development options for Humboldt Bay water trails, particularly when considering new access sites or developing educational materials. Potential next steps in regards to addressing these concerns could include:

- Species-specific monitoring to determine any adverse impacts associated with increased boating (Black brant and other migratory birds are of special importance, as are the eelgrass beds throughout Humboldt Bay);
- Site-specific assessments to minimize or avoid significant adverse effects of boating (to be completed during future implementation phases);
- Development of detailed, feasible strategies for managing long-term use of the trail facilities and the Bay; and,
- Development of a Humboldt bay-specific web-based outreach program, non-motorized boating educational materials, and boater curriculum for the water trail (could be coupled with the efforts of local paddling and resource organizations, schools, and land management agencies).

III. INTERPRETIVE MATERIALS AND SIGNAGE

With limited water trail information posted at access sites, the WTP recommends the addition of interpretive and directional signage to help facilitate easier access to paddling opportunities, and to provide information to paddlers and other recreationists about varying uses of the bay, sensitive resources, and safety concerns. Interpretive resources developed for this project include: draft design for a standard water trails interpretive sign, to be placed at access sites on the Bay; a roadway and directional signage plan; and a draft design for a bay-wide Map & Guide. The project team recommends an interpretive sign and roadway directional signage for each access site, and suggests that these elements become part of any future water trail development efforts.

A. Draft Water Trails Interpretive Sign

After consulting other water trail programs in California and across the country, reviewing existing signage at priority access sites, and receiving input from public meetings and an online survey, certain components were identified as critical elements to a water trails interpretive sign. They include:

- Basic paddling safety information (tidal fluctuations and currents; water, wind and weather conditions; known hazards on the Bay; appropriate boating gear);
- Boating and wildlife viewing etiquette;
- Resource protection measures;
- Map of the Bay that includes key access points, hazardous areas and points of interest; and,
- Site-specific safety and interest information, such as local flora, fauna, or nearby sites of interested when applicable or requested.

The project team hired a local interpretive artist to create illustrations that demonstrate safety and gear information, wildlife etiquette practices, and sensitive habitats. The interpretive signs were initially developed with the following sites in mind:

- Arcata Marsh and Wildlife Sanctuary;
- Samoa County Boat Ramp;
- Woodley Island Marina;

- Fields Landing County Boat Ramp;
- · Hookton Slough, Humboldt Bay National Wildlife Refuge; and,
- Elk River Wildlife Sanctuary.

This is not an exhaustive list of sites that could benefit from water trails interpretive signage. It is recommended that a sign also be placed at other water trail access points as they are developed or determined appropriate. While the overall sign design should remain consistent at each site, the project team notes an opportunity for site-specific information to be placed on the draft WTP sign. Local site-specific interpreters should be involved in future phases of the WTP to ensure any site-specific information presented on a water trails sign compliments existing signage. See Appendix B for the draft design of a bay-wide WTP interpretive sign, to be placed at high-use dock facilities, ideally within a kiosk so that current tide and other information can be situated close by.

B. Directional/Roadway Signage Plan

There is a distinct lack of paddleboat specific directional signage on the Bay, even for high use facilities. The project team recommends that each priority access site have adequate roadway directional signage in the form of Coastal Access signs or paddle boat icons as either new installations, or, where possible, on existing sign posts. See Appendix B for the WTP Directional/Roadway Signage Plan.

C. Draft Water Trails Map & Guide

The Humboldt Bay Water Trails Map and Guide (Map & Guide) is meant to serve as an informational resource for a variety of non-motorized boaters. It was developed with the assistance of the Explore North Coast Paddlers Association, the Humboldt Bay Water Safety Coalition, and with input gathered via an online survey and public meetings. The project team also considered several examples of maps and guides from other locations in California and across the country. Basic components of most map and guides include: safety information; what supplies may be needed; applicable laws and regulations; wildlife viewing protocols, "Leave No Trace" etiquette; invasive and sensitive species information; and access site descriptions.

The project team decided to include the following components to the Map & Guide: a list of Humboldt Bay wildlife and habitat likely to be viewed by paddle boaters; key information from the Sensitive Resource Impact Assessment; contact information for local guides and outfitters; Bay-specific wildlife etiquette; a description of known hazard areas; a discussion of multiple uses boaters should expect to encounter on the Bay; as well as a list of boating facilities, both motorized and non-motorized. One side of the 24" x 36" waterproof Map & Guide is dedicated to a map showing key paddling access points, including longitude and latitude coordinates, as well as hazardous areas, nearby parks, and other potential paddling destinations. The reverse side is dedicated to text explaining Humboldt-Bay specific information, such as laws, safety tips, weather conditions, local outfitters, guides and rental opportunities, and descriptions of access points. A final draft design of the Map & Guide is included in Appendix B.

It is recommended that the Humboldt Bay Harbor, Recreation, and Conservation District manage the printing and distribution of the completed Map & Guide, while NRS be responsible for future updates or revisions to the Map & Guide. If ads or sponsors are solicited to cover the cost of the Guide, the project team notes that any addition of graphics or logos be creatively incorporated into the design so as to not compromise the important information contained therein. Bug Press, a local printing company, recommended printing the Map & Guide on YUPO waterproof paper, in which the estimated cost for 5,000 folded color copies would roughly \$17,500. The project team recommends that the Map & Guide be sold at or just above the cost of printing and distribution. It is further recommended that the full size Map & Guide be available on the NRS website.

IV. PRIORITIZING ACCESS SITES

The *Humboldt Bay Trails Feasibility Study* initially identified forty existing or potential water trail access sites throughout the bay, and through site visits and input from individuals and organizations, each site was prioritized into categories of high, medium, low, and no priority (See the full report at http://www.naturalresourcesservices.org/humboldt-bay-trails-feasibility-study.html). These sites were evaluated based on characteristics of broad water trails program for Humboldt Bay.

Using this baseline data, the WTP project team revisited these recommendations and conducted additional research for each individual access site. Each site was examined for its improvement feasibility and its overall relationship to a bay-wide water-trails program. As part of this initial phase of the water trails improvement effort, the project team determined that several existing sites would require only simple modifications to provide improved paddle-boat access. Other sites were identified as extremely popular access points, but in need of more extensive treatments to accommodate non-motorized boaters.

Throughout the research and public input process, additional access sites were also identified as potential water trail development efforts for the future; some are privately owned and some are not yet developed for public access, and as such, were not included in this phase of the project. See the "Additional Opportunities" section of this report for paddle access sites that are beyond Phase I of the WTP but have public support and could be pursued in future planning and implementation efforts. The following criteria were used to assist in determining Phase I priority sites for implementation:

A. Site Assessments

The project team conducted thorough assessments of each access site to determine what facilities and amenities exist and which opportunities for improvement might be possible (see Appendix C for complete assessments). Each access site was examined and categorized according to the following criteria:

• Property Ownership

Access Features

- o General boat dock
- o Boat ramp
- o Dock w/paddle-boat features
- o Unimproved launch
- o Access by boat only
- o Good low tide access

Parking

- o None
- o Paved
- o Dirt or sand
- o Gravel
- o Unnofficial
- o Number of spaces
- o Road Shoulder width
- o ADA

• Site Amenities

Indoor toilets

6

- o Portable toilets
- o Picnic tables
- o Bench(es)
- o Trash receptacles
- o Water
- o Camping
- o Interpretive facility
- o Boat security
- o Services (food, etc)
- o Showers

Signage

- o Safety and regulatory
- o Interpretive
- o Roadway and directional

B. Interested Landowners/Managers

The project team noted that the owner or manager of the access site must meet any planned improvements with approval. To that end, the team met with several county and city officials to assess buy-in and interest, as any improvements would require future planning and maintenance efforts. The priority sites were selected with confidence in the commitment of the landowners.

C. Public Priorities

Public input on the prioritization of access sites and site improvements was sought at a number of workshops and meetings and through an online survey. Four public presentations were given between June 2007 and August 2008. These presentations are described in more detail below.

Stakeholder Meeting, June 2007

Attendees of the first stakeholder meeting included Humboldt County and local city government officials; land, wildlife, and other government agencies; local paddling organizations and outfitters; multiple non-motorized boat users; tribal representatives; and others. The Humboldt Bay Harbor, Recreation, and Conservation District, in conjunction with the project team, facilitated the meeting by providing background information on water trails, discussing the project goals and expected outcomes, and finally by having small group discussions about which sites are of highest priority, existing safety issues, wildlife/habitat concerns, what types of amenities are important to paddlers, and other issues important to managers and boaters. (For the workshop presentation, please see Appendix D.)

Humboldt Bay Paddle Boat Access Site Survey, December 2007

Utilizing the free online survey service, SurveyMonkey.com, seven questions were sent to attendees of the first stakeholder meeting as well as other members of the paddling community. Respondents were asked questions regarding the type of amenities they find most useful; reasons why they choose particular access sites; the type, width, and length of docks they prefer; and what type of information should be included on interpretive signage (Appendix E). Those survey results were used to inform access site improvement designs.

Humboldt Bay Symposium, April 2008

The project team presented during the "Marine Transportation in the Humboldt Bay Region" Panel at the Humboldt Bay Symposium (Appendix D). An introduction to the functions of water trails, existing conditions for paddlers on the Bay, and design considerations for priority access sites were presented.

Public input from this event focused on ensuring that the Sensitive Resource Impact Assessment was a thorough document and that local tribes had been included in the planning process.

Presentation to the Explore North Coast (ENC) Paddlers Association, June 2008

The project team presented at the regular monthly meeting of the ENC Paddlers Association. At the time of the presentation, the draft designs for priority access sites were not complete, but the overall site improvements were described and illustrated in a PowerPoint presentation. Overall the group was engaged and excited about the project and suggested a variety of site improvements around the Bay. Comments from the group addressed ensuring paddle-specific or day-use parking spots, including information about tides and weather, and the opportunities and constraints surrounding the Mad River Slough unofficial access point (see the "Additional Opportunities" portion of this report for further discussion on the Mad River Slough).

Public Open House, July 2008

The draft interpretive materials and conceptual site designs were made available for public viewing during an open house put on by the project team and HBHRCD and held in partnership with the Humboldt State University Humboldt Bay Aquatic Center. Invitees included individuals and organizations that attended previous public meetings and workshops as well as the general public. The meeting was announced in print and on radio media. Government agencies, mariculture operators, waterfowl hunting interests, recreational paddlers, and others attended. Proposed designs for each priority access site and draft interpretive materials were posted on the walls with comment forms available. The project team answered questions regarding recommendations and how water trail improvements would interact with other bay uses. Primary concerns included that non-motorized boaters recognize and respect the variety of other user groups, and that increased non-motorized boating activities should be given careful considerations as they relate to the potential impacts on sensitive resources.

D. Geographic Location

The geographic location of the priority sites was also considered during the prioritization process. Arcata Bay has few developed paddling put-in and take-out sites and virtually no low tide access. The project team decided that ensuring each portion of the Bay is accessible was a criterion for selecting the priority sites. Highlighting at least one location in each portion of the Bay can potentially reduce trespassing onto private property and/or use of "unofficial" sites, and also provides paddlers more destinations.

E. Americans with Disabilities Act (ADA): Accessibility

There are relatively few ADA accessible gangways or docks on Humboldt Bay. The Bonnie Gool Guest Dock, located on the Eureka waterfront, maintains a consistently accessible slope of 8.33% for about 90 percent of the time. During extreme low tides the slope becomes too steep. Local paddle boaters have commented that while the gangway is ADA accessible, there are a series of ninety-degree turns in order to maintain the slope percentage that make it difficult to carry a boat to the water. After further researching the ADA requirements for recreational boating facilities, the project team notes that the degree to which the Bay empties during low tide events likely prohibits many access site gangways or entry points from achieving consistently accessible slopes. Each priority site description below notes whether the site is ADA accessible and to what degree it may be made so. It is important to note that by creating facilities as close to ADA accessibility guidelines as possible increases a site's usability by people of all abilities. To that end, the Arcata Marsh and Wildlife Sanctuary was noted to be the priority access site which may be improved as an entirely accessible facility, as the parking, restrooms and other amenities, and future constructed docks can all be designed to be ADA accessible. The project team notes that any project proponent that undertakes permitting and construction of the facilities will be responsible for evaluating compliance of their project with the Americans with Disabilities Act.

F. Variety of Launches

- **Boat Docks:** there are several public boat docks around the bay but few are designed for paddlers. Standard boat docks are usually elevated too high from the water surface to facilitate accessible launching of paddleboats.
 - O An example of a dock improved for paddleboat access is at the Hookton Slough access site in the Humboldt Bay National Wildlife Refuge (HBNWR). The dock has a "step-down" feature at each end that puts boaters at water level in improve boat entry and exit access. Public input from Humboldt Bay paddlers indicated a strong appreciation for this type of improvement, and the project team recommends including this feature where possible and appropriate on future dock improvements around the Bay.



Hookton Slough step-down dock feature.

- **Boat Ramps:** designed for and used primarily by motorboats and sailboats on trailers, however the ramps can provide a convenient hard surface for paddleboat access. Inconveniences can include slippery surfaces and shallow slopes which make it difficult to get in or out of a paddleboat.
- Improved or Readily-Usable Shoreline: a number of sites have not been improved for paddleboat access but are physically usable because they have firm substrates, access at all tide levels, and adjacent parking.
- Unimproved or Poor Condition Shoreline: sites with limitations, but still used by paddlers.
- Wheelchair-Accessible Sites: Americans with Disabilities Act (ADA) accessible sites need to include adequate parking, restrooms and boat launch facilities that allow disabled boaters to safely and comfortably utilize them.
- Paddleboat Access Only Sites: there are a few paddling access sites not accessible by motor vehicles.

G. Potential for Sensitive Resource Impacts

One of the primary goals for the WTP was to ensure the recognition and protection of sensitive resources and habitats on Humboldt Bay. With assistance from Winzler & Kelly Consulting Engineers, the Sensitive Resource Impact Assessment (Appendix A) provides project planners and funding agencies with current background information regarding sensitive resources in and around Humboldt Bay, as well as recommendations for protecting these resources if the program is implemented further. Understanding the impacts of increased paddleboat recreation on the sensitive wildlife, habitats and cultural resources within and surrounding Humboldt Bay is vital. While non-motorized boating activities may be construed as low impact, especially when compared to other types of activities (e.g., quiet, no air or water emissions, slow speeds), they can and do have adverse impacts on Bay resources.

The Sensitive Resource Impact Assessment provides a brief discussion regarding the types of potential impacts that increased paddling and the creation of launch related facilities can have on these resources, and reviews the locations of documented (available through Geographic Information Systems, or GIS) sensitive wildlife, plants, and habitats around the bay. Lastly, the report offers recommendations to reduce these potential impacts and will be used by project staff, land managers, and involved funding organizations to identify potential access and preferred water trail routes that minimize impacts on wildlife and sensitive areas.

V. PHASE I PRIORITY ACCESS SITE IMPROVEMENT RECOMMENDATIONS

Through the prioritization process described above, the project team identified five top sites for non-motorized boating improvements. They are presented here in no particular order. Please see Appendix F for cost estimates.

A. The Arcata Marsh and Wildlife Sanctuary

The Arcata Marsh and Wildlife Sanctuary Boat Launch Facility is located at the end of I Street. The property is owned and maintained the by City of Arcata. The City is planning to install a seasonal floating dock from the existing boat ramp to the low-tide channel. At the time of this report, this solution is considered "temporary" by the City of Arcata, as they are interested in providing improved paddleboat access prior to the next phase of the WTP.

Existing Conditions

The existing boat ramp is located at the northwest corner of the parking lot (Figure 1). The ramp is usable at only the highest tides, and at low tide the nearest channel is approximately 150 feet from the boat ramp. In the past, the concrete boat ramp was used by motor-boaters backing their boats into the water, but the narrow window for high-tide access now generally prohibits motorized boating at this facility. The existing floating portion of the dock, adjacent to the boat ramp (Photo 1), is non-functional as it broke apart several years ago



Existing concrete boat ramp at low tide.

and is too short to be of use. Paddlers wishing to use the Marsh facility are generally forced to use the steep and slippery concrete boat ramp. The existing parking lot has recently been repaved and is approximately 24,000 square feet, but lacks any appropriately striped ADA designated parking. There is one portable ADA-compliant toilet on site at the north end of the parking lot. Currently no potable water is available at the Arcata Marsh site.

Recommendations

Launch Facility

The dock facility represented in the accompanying figures should provide non-motorized boating access at most tide levels. This conceptual dock design addresses issues with low tide access, ADA conformity, and general comments from regional boaters. In the past, boaters have expressed concern for docks that incorporate 90-degree turns in order to comply with ADA slope guidelines, although the incorporation of landings may be required per ADA guidelines. The Arcata Marsh design increases the length of the dock to avoid turns. The dock design presented here extends to the parking lot edge. In this configuration, the dock slope is never greater than 8.33%.

At low tide, this portion of Humboldt Bay has virtually no direct shore access for boaters. The nearest low-tide channel is approximately 80 feet from shore, and at extreme low tide events, the channel is prohibitively shallow. Since Humboldt Bay is heavily influenced by tides and carries a heavy sediment load, it is anticipated that the channel will shift position over time.

Because of the shallow nature of Arcata Bay and the small channel, it may not be feasible to provide access to the water for all tide events. This will impact the final design in the following ways: choice of dock material, type of dock anchoring point, degree of impact to the environment, type and need for dock stabilizing structures (both horizontally and vertically), and what type of impact the dock will have on the channel geomorphology. For any final design, the dock will need to change elevation to match the change in water elevation. The dock will need to provide easy access to a paddleboat on the water surface.

If the dock is designed to only allow access at water elevations greater than low tide, then the dock may need to stop prior to resting on the Bay mud depending on the manufacturer specifications. Also, explicit directions must be posted about this condition to inform boaters.

Two tides were considered in this dock design: mean high tide (MHT) and mean low tide (MLT). The MHT is 5.82 feet (NAVD88) and the MLT is 0.93 feet (NAVD88). The tide data was retrieved from NOAA North Spit station (Station ID 9418767), which is located near the Humboldt Bay entrance. This data is assumed acceptable for this conceptual design, but the final design should consider any tidal differences that may occur due to the Bay hydraulics. Figures 2 and 3 present multiple views of the dock configuration at the two tides.

In the configuration presented, the ramp is expected to have a very shallow slope at MHT. At MLT, the dock is expected to have slopes near 5%. Final design will include a more detailed topographical study in order to determine the best position and starting point of the dock system so the slope is less than 8.33% and minimizes the amount of required material. It is anticipated that the ramp length will need to be between 90 feet and 105 feet to meet ADA guidelines and connect the shore to the low tide channel. This length does not include the water access platform length or width.

The water access platform is proposed to be 11.25 feet wide and 43.33 feet long. These dimensions would require three (65", 45", 10") cells along the width and eight cells along the length. The dock is designed to be longer in the easterly direction than in the west. The differences in lengths allow access on both sides of the east end while still allowing plenty of access along the south edge of the west end and minimizing the amount of building material. Providing the additional entrance/exit length on the east side will allow protection from wind waves that occur in the Bay. Also included in the design are cleats on the dock for temporarily securing boats to the dock, handrails along the length of the dock, and two inch raised trim along the edge of the water access platform. The trim will serve as a safety component to keep wheel chairs and other items from rolling off the platform.

This conceptual design proposes using a polyethylene, snap-together, cell style of dock (such as the 1000 Series Low Profile manufactured by Connect-A-Dock, Inc.). There is very little maintenance and multiple configurations are possible. The low profile cells produced by Connected-A-Dock are ten inches thick and provide eight inches of freeboard when floating. Extra flotation is available in case more is needed, but it will increase freeboard and dock height. Also available from the manufacturer are accessories such as handrails, and wheel chairs can also operate on this material. The docks can support the expected load at the Arcata marsh.

Anchoring and floating dock guides within the Bay will be dependent on the final design, manufacturer, environmental concerns, and feasibility. Figures 1-3 show a pillar style of floating dock guide and anchor. Currently there are several docks in the Bay that utilize this style of anchoring guide. Another design uses guide wires that attach to the shore instead of using pillars. The HSU Crew/HBRA Dock currently has this type of structure.

Potable Water

No potable water currently exists at the site. The nearest potable water source is located at the City of Arcata's Corporation Yard, which is located at the north end of the wastewater treatment facility (Figure

4). To provide potable drinking water to the site, approximately 2,500 linear feet of piping will be required. The pipe route presented in Figure 4 is preliminary only and would require soil, environmental, and cost analysis before final construction documents could be finalized. Based on the complexity and cost, it is recommended that potable water not be pursued as part of implementation efforts.

Restrooms

Providing sanitary sewer service to the site was considered, but determined to be too costly to install and operate. A sanitary sewer system would require a grinder pump and force main to transfer wastewater from the site to the appropriate sewer main. The recommended design includes installing an ADA-compliant vault toilet at the north end of the parking lot (Figure 1) in place of the current portable toilet. Figure 5 presents an example vault toilet. The final design of the vault toilet will need to evaluate site conditions such as soil characteristics and water table elevation.

Parking Area

Minor changes to the parking lot striping are recommended, and new striping should include ADA-compliant parking stalls (Figures 1 and 5.b). Furthermore, in order to facilitate loading and unloading of non-motorized boats from vehicles, it is recommended that the south end of the parking lot, closest to the dock, be reserved as a loading zone (Figure 5.c). This will allow paddlers easy access to the adjacent grass to prepare for or break down from a day of paddling without worrying about other vehicles and damage to the boat from the pavement.

Other Considerations

There are several picnic tables currently located in this area, but they are not specifically designed to be ADA-compliant. Two recommendations are being made with respect to placement of ADA-compliant picnic facilities (Figure 5.b and 5.c): construct a paved picnic area in the grass area adjacent to the Bay and west of the parking lot; and construct a paved picnic area in the shelter of the pines that grow between the parking lot and Klopp Lake. Final design should investigate materials that provide easy access for wheelchairs and other mobility assist devices and that are permeable water. If no material is determined acceptable, then the area should be paved. Interpretive signs (Figure 5.d) will help boaters to locate the water trail and will warn them of any possible dangers. Providing boat storage onsite (Figure 3) will also allow paddlers to lock up their boats and enjoy other outdoor activities found at the Marsh and in nearby Arcata.



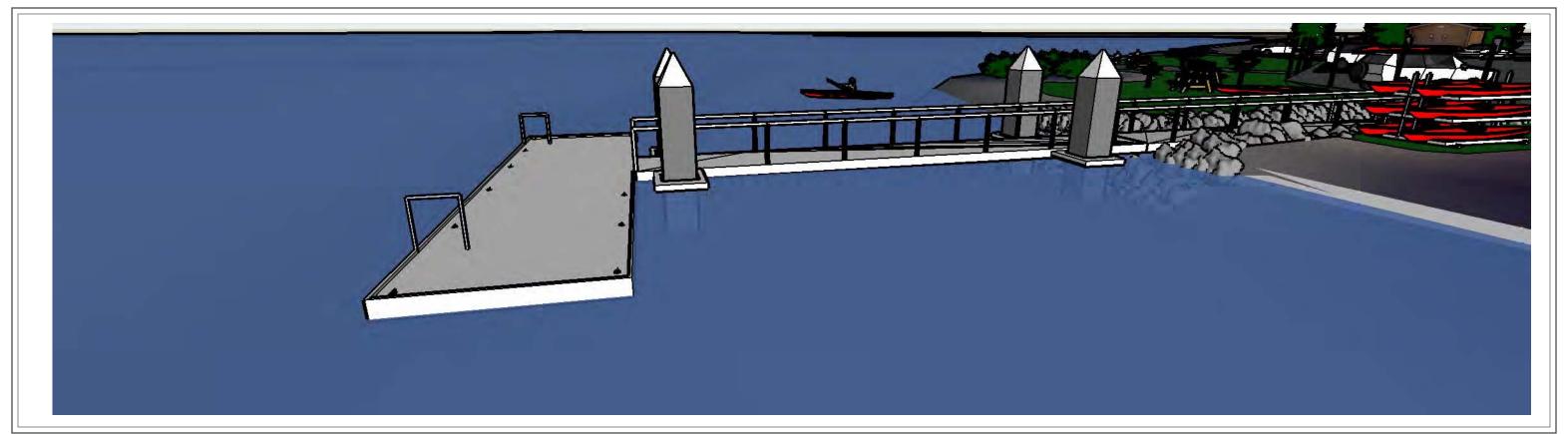


Humboldt Bay Water Trails: Arcata Marsh

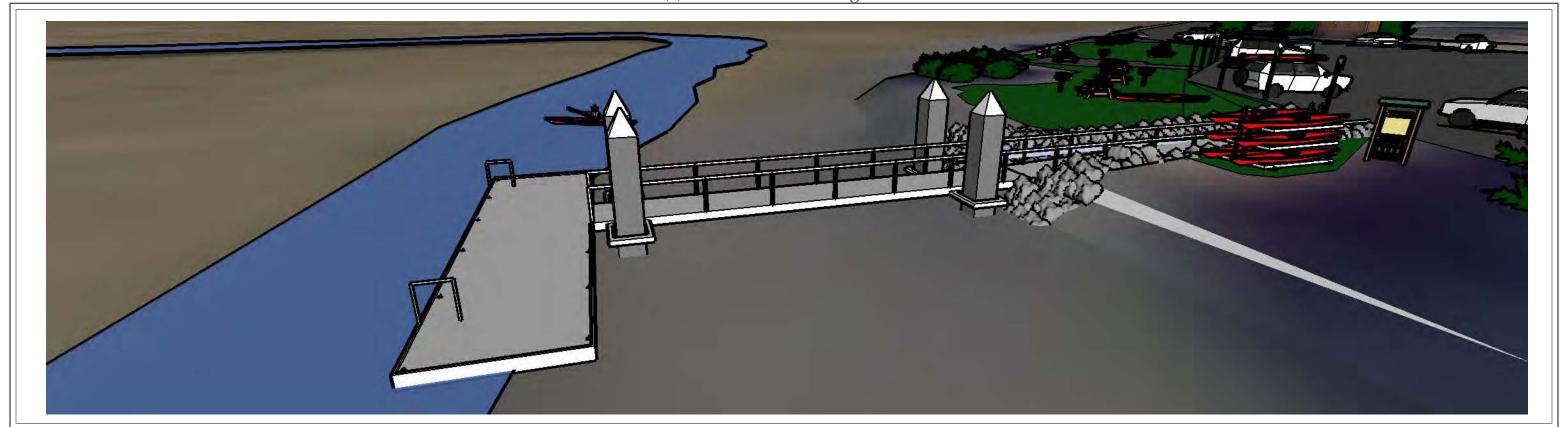
Arcata Marsh: Site Overview

Figure 1

Natural Resources Services, RCAA



(a) Profile of dock at high tide



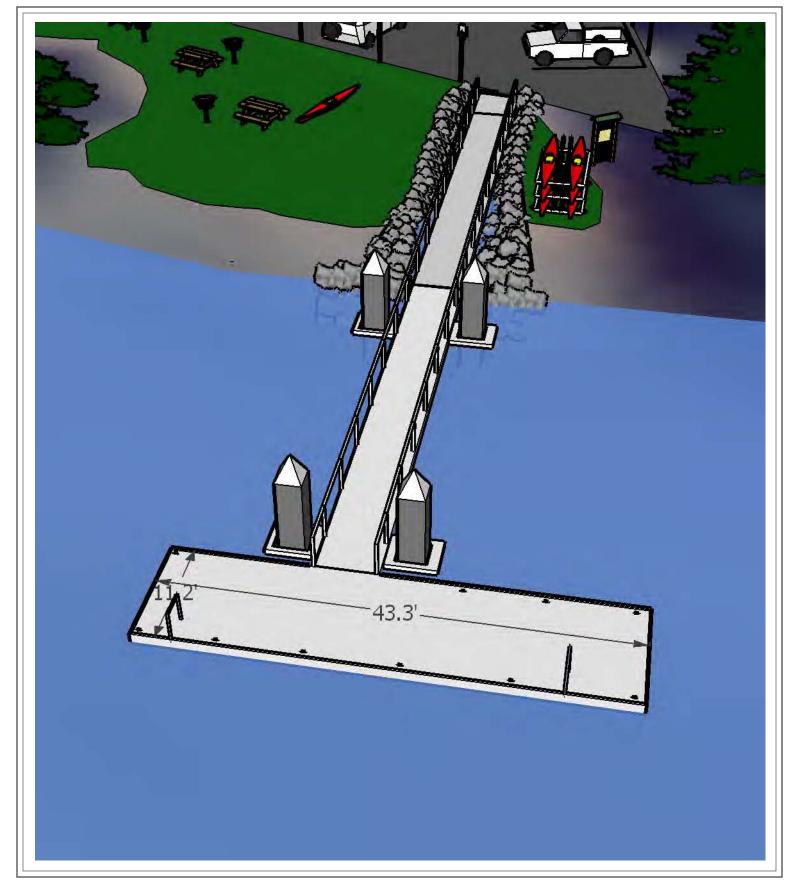
(b) Profile of dock a low tide

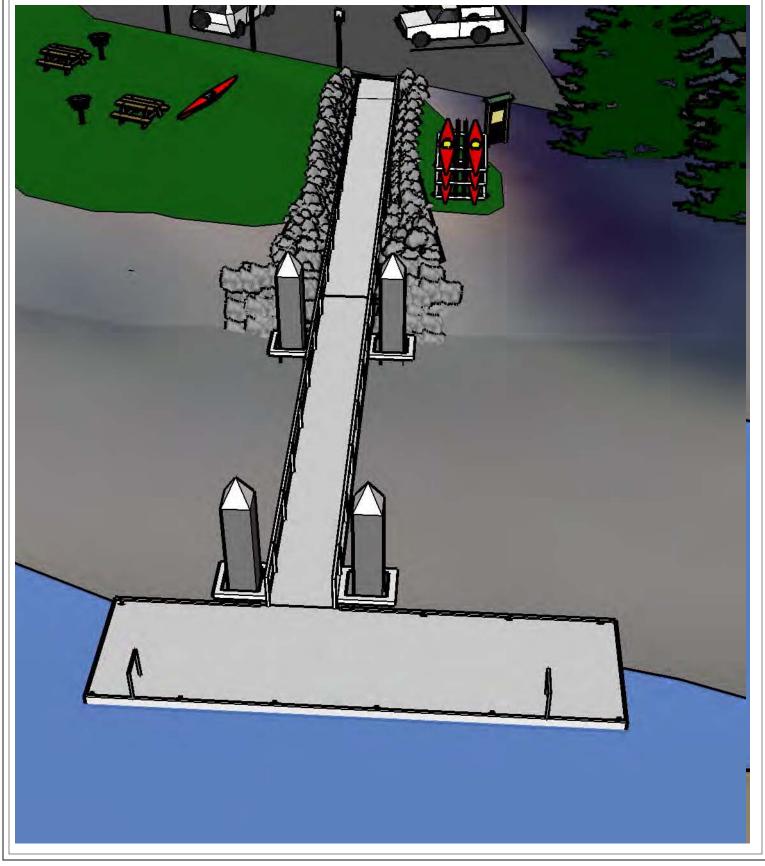
Humboldt Bay Water Trails: Arcata Marsh

Dock Profile-High and Low Tide

Figure 2

WINZLER & KELLY





(a) Plan view of dock at high tide

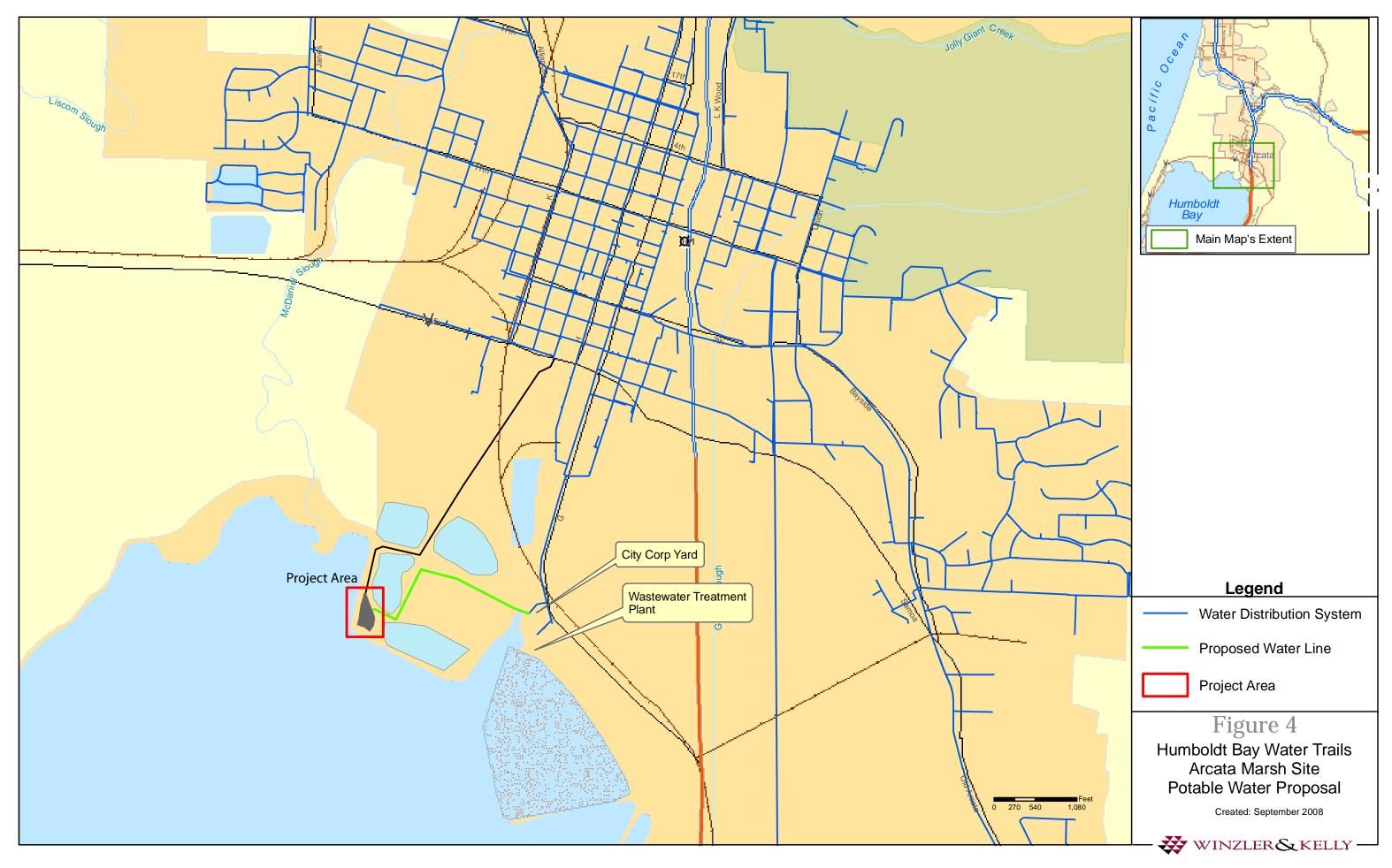
(b) Plan view of dock at low tide



Humboldt Bay Water Trails: Arcata Marsh

Figure 3

Plan View of Dock

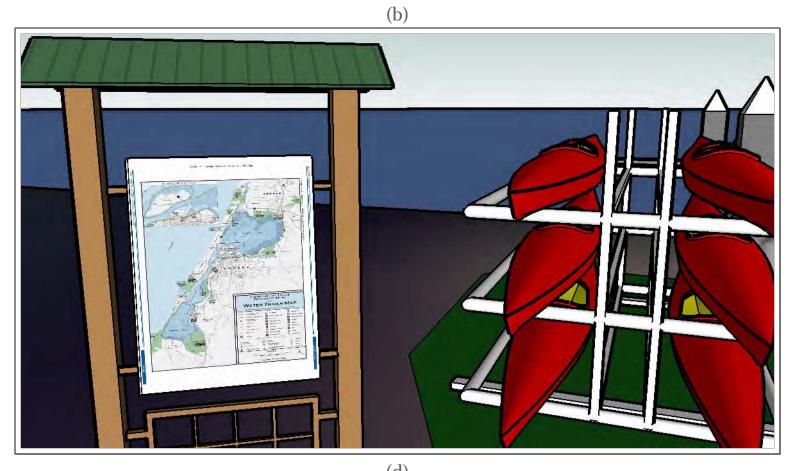






(a)







Humboldt Bay Water Trails: Arcata Marsh
Other Design Considerations

B. Samoa Boat Ramp County Park

The Samoa Campground is located on the Samoa Peninsula on New Navy Base Road. The property is owned by the Wildlife Conservation Board, but is leased and maintained by the County of Humboldt through a cooperative management program with California Department of Fish and Game (DFG).

Existing Conditions

There are two main access points for paddle boaters at Samoa Campground: the boat ramp and a beach access point via a short pedestrian trail. Most paddlers use the beach access because the boat ramp is steep, slippery, and boat damage could occur due to the rough concrete and swift currents. Presently, the path to the beach launch is not marked and boaters must traverse some large, partially buried rocks after unloading from the parking lot. An off-highway vehicle (OHV) trail, which is adjacent to the opposite side of the ice plant mound, is approximately 12 feet away from the pedestrian trail (Figure 6).

Campsites are located on the perimeter of the 115,000 square foot parking lot, but



Top photo shows existing concrete boat ramp, close view. Bottom photo shows existing concrete boat ramp, far view.

campers are also allowed to park their RVs throughout the parking lot. Many of the campers park their OHV's at the nearby BLM Samoa Dunes Recreation Area, and use the campground as a staging area. OHV. The parking lot has limited striping and other markings, which makes it difficult for day users and campers to park appropriately. There is no specific area for unloading paddleboats or equipment.

Potable water exists at the site, as well as ADA-compliant showers and toilets. The men's bathroom includes a single urinal and a single toilet stall. The women's bathroom includes two toilet stalls. The wastewater is discharged to four septic tanks, which then travels through a sand filter and then into a leach field. All of the wastewater components are directly to the south of the restroom facilities.

Recommendations

The conceptual design includes improving access to the beach launch, the existing amenities, and the design of the campground area to make it more attractive and easier to use for boaters. The final design should involve the campground host and operator input. From discussions with the County Park's Superintendent, they would be willing to modify the campground layout to provide clear day use parking and to reconfigure the area so it is more attractive to the paddle boat community.

Launch Facilities



Existing campgrounds – fencing separating campgrounds from road is in the foreground.

Removing a portion of the paved parking lot area in the southeast corner and replacing it with sand (Figure 6) would provide boaters with a place to prepare for or break down from paddling (Figure 7.a). Paving the path to the existing buried rocks and submerging them so their tops are at the same level as the pavement (Figure 7.b) would create easier access to the beach for paddle boaters and pedestrians alike. Including a boat wash station (Figure 7.c) in this area would allow boaters to rinse sand, saltwater, and plants or animals off their boats before loading them onto their vehicles, and would reduce the spread of invasive species that could be transported on paddleboats. A timer control is recommended on the wash station to decrease water waste and ensure the amount of time the water can be left on is minimal. Locating the wash station on sand will allow the wastewater to percolate into the sand and not run directly into the Bay. Significant runoff or point source discharges are not anticipated. The surface material used should be determined during final design.

Signage

As with the other access sites, this site should have an informational kiosk (Figure 7.d). The informational kiosk can help paddlers locate other access points nearby and alert them to possible dangers. Furthermore, since OHV vehicles frequent this area, it is important that the paddling community have some area to enter and exit the water without OHV's driving near them. Therefore, a sign should be installed to keep OHV's out of the beach launch area (Figures 8.a and 8.b). This sign should be installed above the tidal zone.

Restrooms

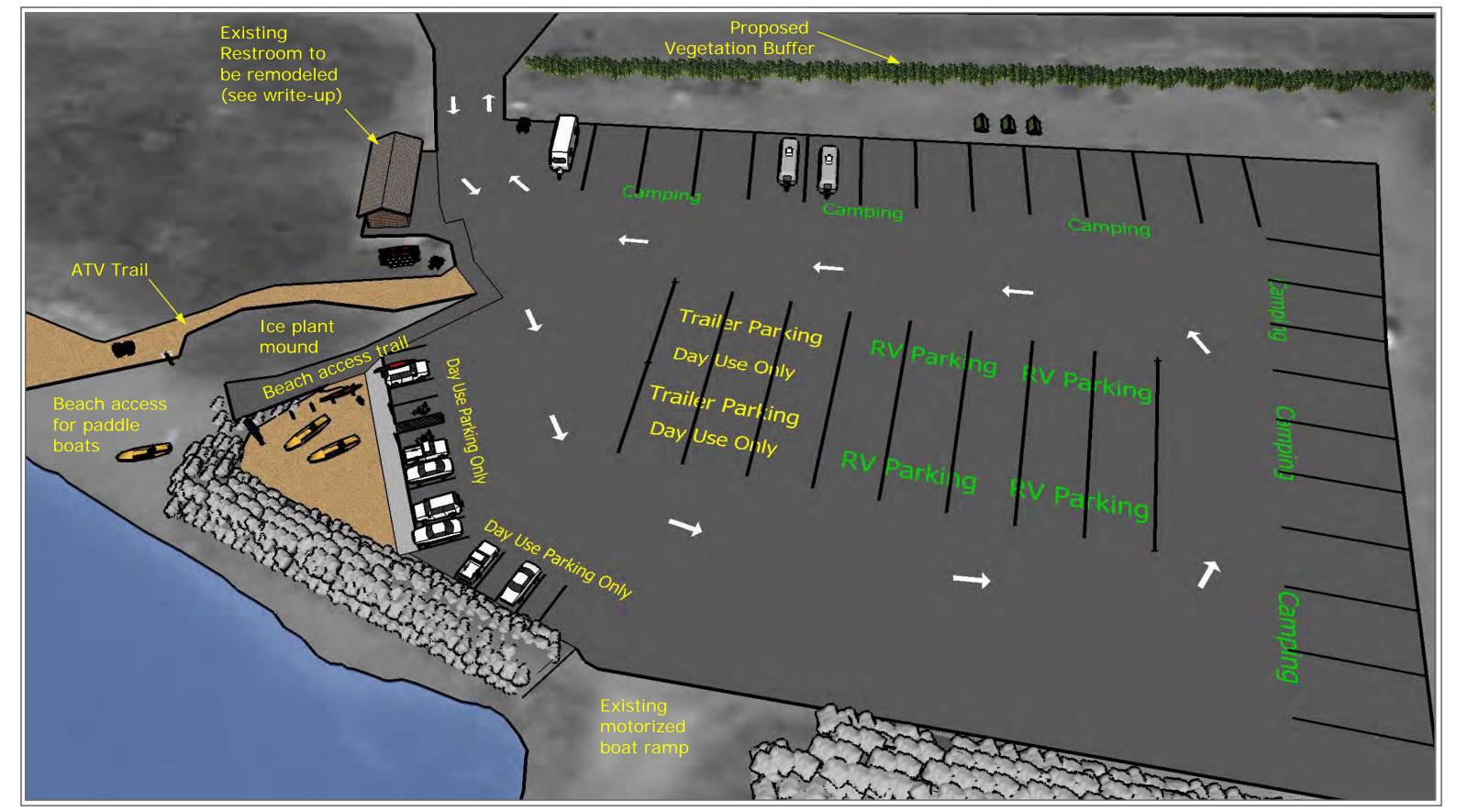
The only modification being suggested for this conceptual design with respect to the existing restroom facilities is to remove the urinal and install a second toilet stall in the male bathroom. The County Superintendent indicated that campers must endure long waits to use the restrooms in the early morning during busy camping seasons. Suggesting additional stalls/urinals to the system or to expand the wastewater system is beyond the scope of this study.

Parking Lot and Campground

The parking lot should be striped, and day use-specific versus camping/RV stalls should be clearly marked (Figure 6). Indicating day use parking spots for vehicles with and without trailers will help delineate which spaces are reserved for motorized boat operators versus paddle boaters. ADA parking should also be indicated. In addition to the striping, arrows painted on the parking lot surface will create an easy traffic flow. Traffic should move in a counterclockwise pattern to keep drivers from crossing paths when entering the parking lot. Signage should be installed to indicate a maximum speed of five miles per hour within the parking lot.

Other Considerations

A final design recommendation is to create a vegetated buffer and windbreak between New Navy Base Road and the campground. Native vegetation such as wax myrtle and beach pine are recommended. Further improvements to the camping facilities at the site, such as vegetation planted between individual campsites, and expanding the grassy areas for camping, should be explored in future phases of the WTP. This may encourage non-RV campers to utilize the facilities, as well as improve in-boating camping conditions for paddlers. Additionally, if a boater is camping or utilizing the area for other activities, there should be a facility for boaters to securely leave their boat (Figure 8.c). The suggested structure would not provide a lock, but instead a place to lock the boat to; similar to the way cyclists lock their bikes to bike stands.

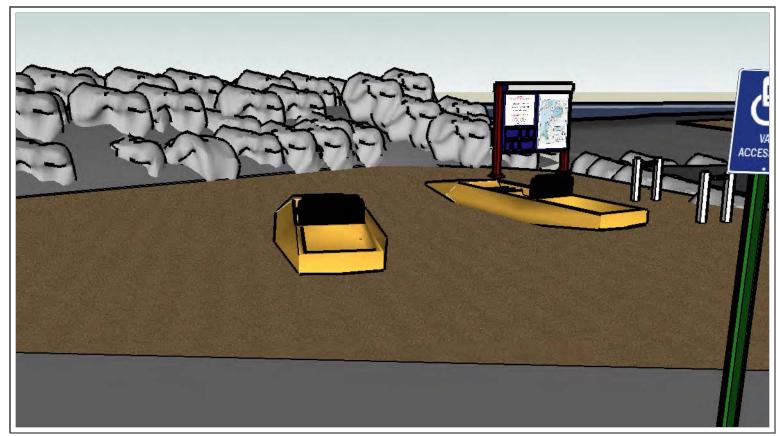


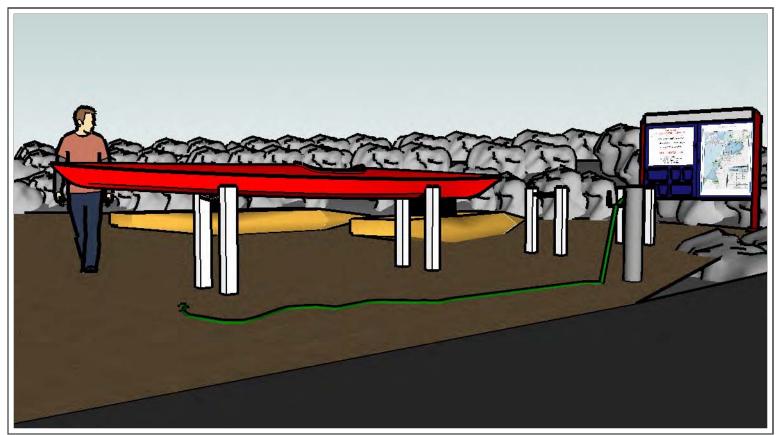


WINZLER & KELLY Humboldt Bay Water Trails: Samoa Campground

Figure 6

Parking lot and camping details





(a) Boat preparation area



(c) Boat wash statioin



(b) Path to beach launch

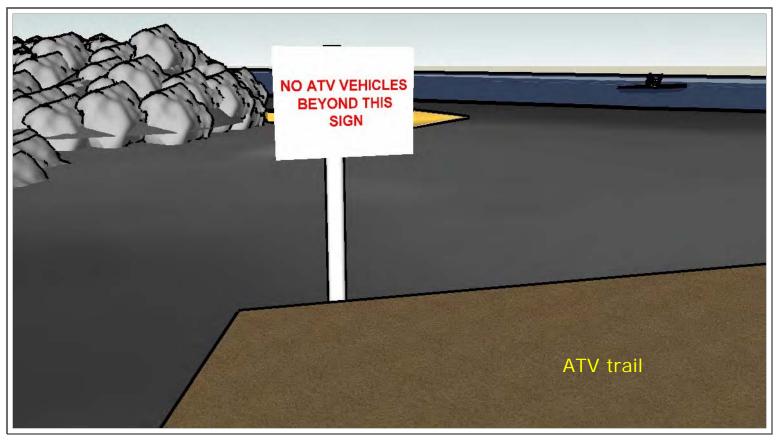
(d) Water trail information kiosk

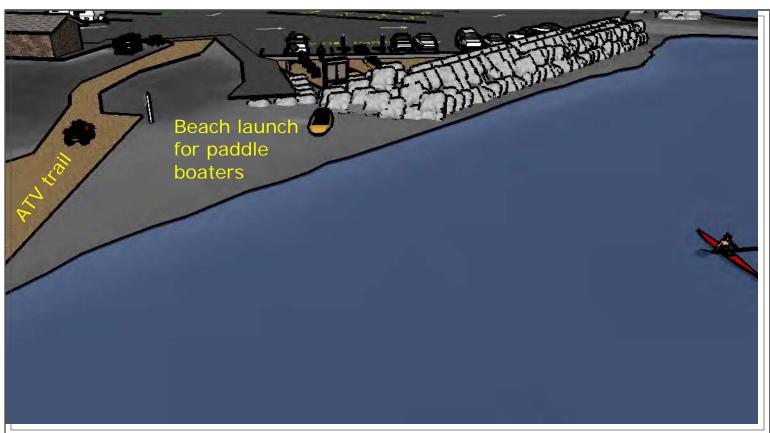


WINZLER & KELLY Humboldt Bay Water Trails: Samoa Campground

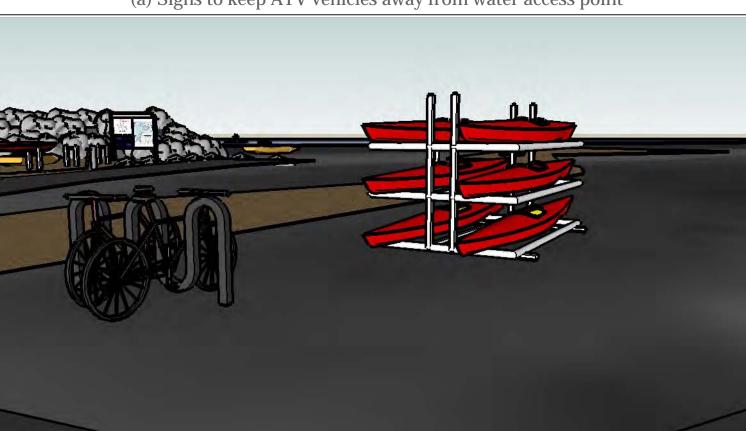
Conceptual Design







(a) Signs to keep ATV vehicles away from water access point



(b) Beach water launch



(c) Boat and bike storage

WINZLER KELLY Humboldt Bay Water Trails: Samoa Campground

Conceptual Design



C. Woodley Island Berth G (and other Eureka Waterfront Docks)

The Eureka Waterfront docks represent the majority of access points along the mid-portion of Humboldt Bay. While this design focuses on the Woodley Island paddling access point (Berth G), many of the other docks along the Waterfront maintain similar characteristics, so this new design will be transferable to other locations. The dock is owned and maintained by the Humboldt Bay Harbor, Recreation, and Conservation District.

Existing Conditions

While the entirety of Dock G is designed for motorized boats, both sides of the first slip on the north side of Dock G is reserved for paddleboat access. The freeboard at this site was measured at 11.5 inches. Because of the dock height from the



Existing Dock G, Slip 1.

water, boaters have difficulty entering and exiting their boats. The total dock width is 4.3 feet wide and the active width (concrete base) is 2.6 feet, which makes it difficult for boaters to prepare for or break down from paddling. The dock is 37 feet long.

Currently there is no ADA access for paddle boaters. Although comprehensive gangway slope and tidal data are lacking on Woodley Island, on two occasions, slopes between 14.1 % and 16.7% were measured at Dock G's gangway (all gangways at the Marina are similar) between the lower low tide and the lower high tide, which is much too steep for wheelchair and other disabled access. Other facilities at the Marina include: two public, ADA-compliant bathrooms; ample parking, including ADA-compliant striping; potable water; a restaurant; and a gift shop.

Recommendations

Launch Facilities

The conceptual design includes a step down platform on the right edge of the dock shown in Figure 9. There is relatively good access for paddle boaters at Dock G with the exception of the dock height. This concept would provide better access to the water because there is less freeboard. In addition, the dock's functional width would be increased. As noted above, the gangway at Dock G is not currently ADA accessible. Given the current length of the gangway and transition plate, and their proximity to the existing boat slips, modifications to the existing configuration would not yield better access. It is presumed that reconfiguring the gangway would be cost prohibitive.



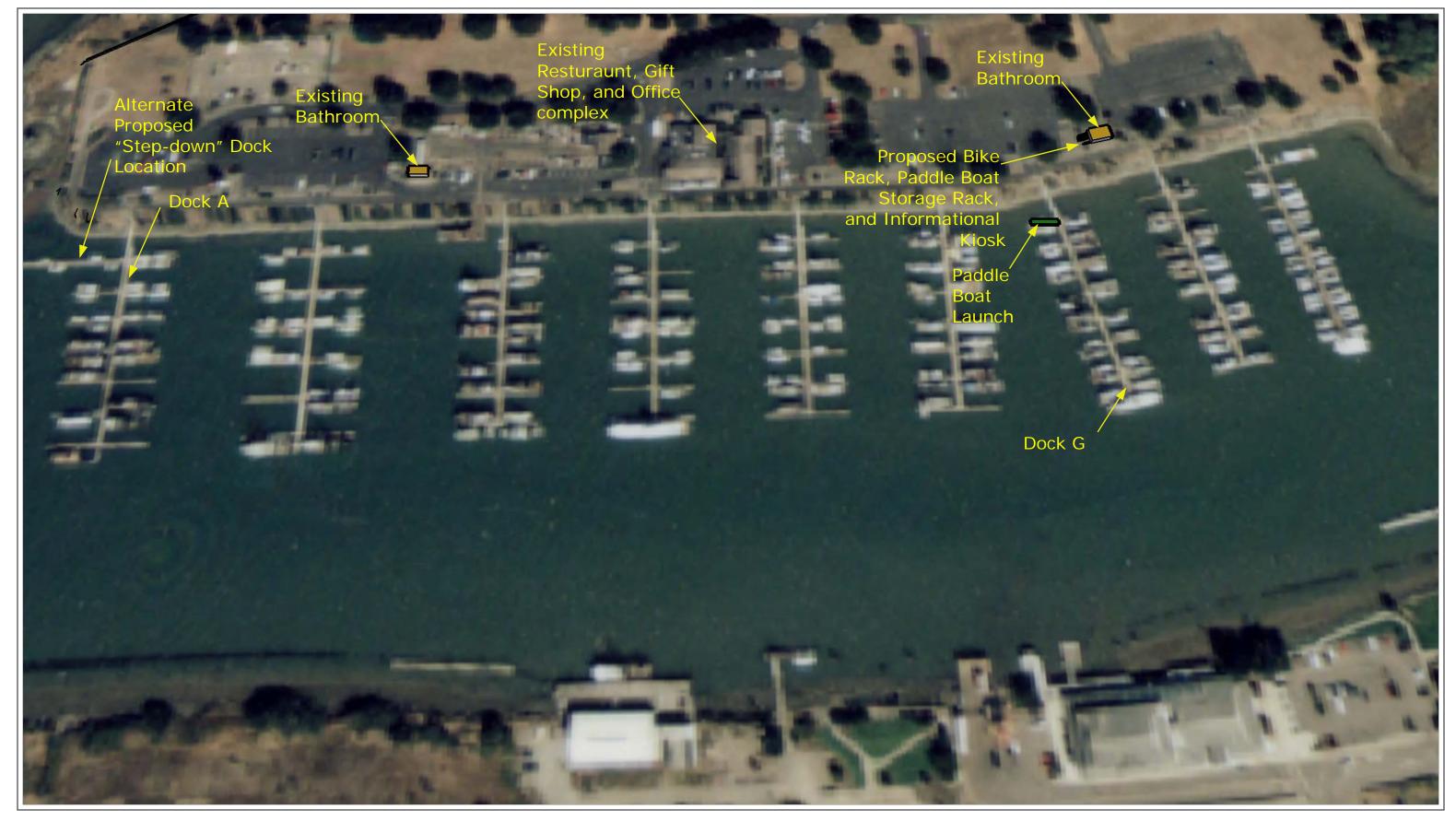
Figure 9: Paddling access improvements to Dock G, Slip 1, include a step-down dock addition.

Changing the access point from Dock G to Dock A may be a worthwhile consideration at the final design phase. If the step down dock were attached to the north, heading west of Dock A, paddle boaters would not need to travel through the Marina's larger, motorized, and commercial boat traffic, thus increasing safety for paddle boaters. ADA accessibility at the dock may be achievable at this end of the Marina. Paddle boaters could also benefit from the existing kayak business located at Dock A, which provides tours, guide materials, rentals, and retail. This alternate location is presented in Figure 10.

Other Considerations

A primary site recommendation is to placing a WTP interpretive sign at the access site; a variety of interpretive signage addressing boating and fishing activities at the Marina currently exists. Secondary proposed design considerations for the Woodley Island Marina include a fish cleaning station and a boat storage area. While conducting a field analyses, two Marina caretakers were questioned about including a fish cleaning station at the site. In the past there has been a fish cleaning station that discharged directly into the Bay, but it was removed due to sea lions becoming territorial and chasing several people, including one of the caretakers. Future placement and management of a fish cleaning station should be considered carefully. It is recommended that the final design include connecting the station to the existing sanitary sewer system and installing a grinder pump to break down carcass material and other objects that might be disposed of at the station.

Boat storage should also be provided. While Dock I is a temporary storage option, paddle-specific, secure onsite storage would allow paddlers to lock up their boats and enjoy other activities found at the Woodley Island Marina. The storage and informational kiosk could be similar to that presented in Figure 5.d.





Humboldt Bay Water Trails: Woodley Island

Figure 10

Woodley Island: Site Overview

D. Fields Landing County Boat Ramp

The existing Fields Landing boat launch is located in the South Bay. The boat launch can be accessed easily via Highway 101 and Railroad Avenue. The property is owned and maintained by the County of Humboldt.

Existing Conditions

The existing boat launch is designed for motorized boats to be launched by backing a boat and trailer into the bay. The launch is made of concrete and is approximately 33 feet wide. Two floating docks extend into the water on either side of the boat launch (Figure 11). The two docks are constructed similarly: a wooden platform is supported by plastic cells, which provide the floatation. The freeboard is approximately 1.6 feet. The docks are anchored by six pillars (three pillars per dock), each 40 feet apart. The docks are anchored to the shore via hinges. Both docks are 6.33 feet wide and have six 20 foot



Existing Fields Landing concrete ramp and boat docks.

long sections, equaling 120 feet in total length. The north dock (right dock in Figure 11) extends approximately 7 feet farther into the bay than the south dock.

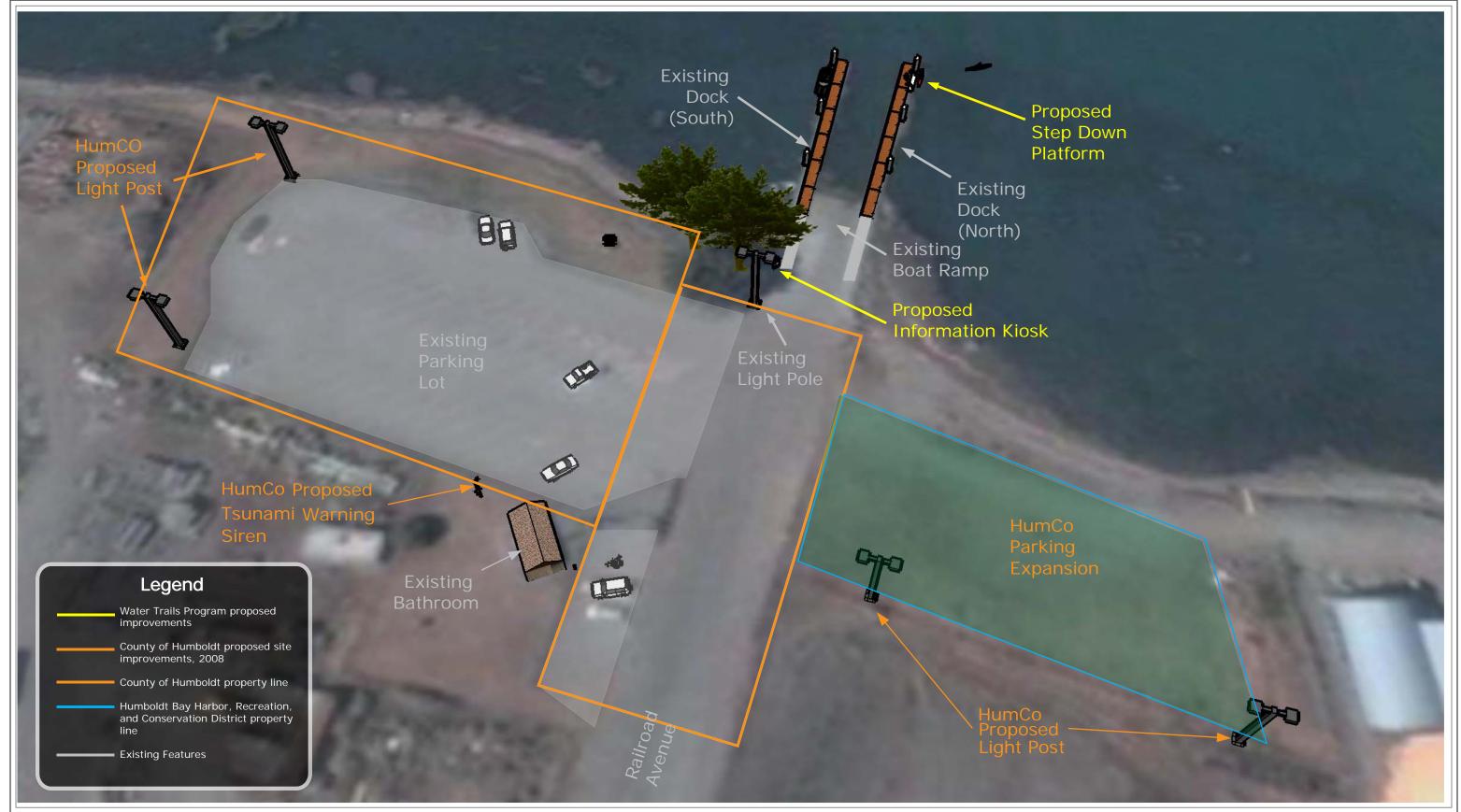
Note: This site is currently undergoing a phased set of improvements. Initially, the County is pursuing permits and funding for modifications of the parking lot, restrooms, perimeter lighting, and installation of a tsunami siren. Subsequent phases, in which the dock facility will be improved, should incorporate the following non-motorized boat design recommendations.

Recommendations

Launch Facilities

The limiting factor at the Fields Landing access point for paddle boaters is the height of the dock above the water surface. The proposed design would decrease this height by providing a step down platform (Figure 12). The step down platform will allow boaters to enter and exit their boats with less difficulty than the current dock configuration. The step down platform should include two handrails and two boat cleats.

The length of the platform should be approximately 15 feet and the width approximately 3 feet. No material has been selected to construct the platform during this conceptual design phase. The materials could include wood, metal, or synthetic materials. As shown in Figure 12, the proposed location of the platform is on the west end and north edge of the north dock per the County's request. This location was chosen instead of the south dock due to better low tide access, but it will be exposed to wind and waves coming from the north, northwest, and west. Therefore, the final design should evaluate the feasibility of installing a second platform on the south dock's south edge as well.





Humboldt Bay Water Trails: Fields Landing

Figure 11

Fields Landing: Site Overview





Humboldt Bay Water Trails: Fields Landing

Figure 12

Fields Landing: Proposed Dock Modification

E. Hookton Slough, Humboldt Bay National Wildlife Refuge

This boat launch at the Humboldt Bay National Wildlife Refuge (HBNWR) is a great resource in South Bay for non-motorized boaters, and is accessible from Hookton Road, west of Highway 101. It is owned and maintained by the Humboldt Bay National Wildlife Refuge (U.S. Fish and Wildlife Service).

Existing Conditions

Non-motorized boaters have access to Hookton Slough at both high and low tides. The existing dock provides two step-down features and provides easy access for most non-motorized boaters. The dock is not ADA accessible at low tide as the gangway is too steep. There currently is an ADA-compliant restroom, interpretive signage about the refuge, and unpaved parking.

Recommendations

The dock and gangway do not require any improvements at this time, but a water trails interpretive sign should be placed at the dock site. At the time of this report, HBNWR is in the process of updating existing site signage and has given input into the draft WTP sign. See the Humboldt Bay Water Trails Directional/Roadway Signage Plan in Appendix B of this report for specific information regarding directional and roadway signage.



Step-down dock feature at Hookton Slough.

V. FUTURE WATER TRAIL PROJECTS AND OPPORTUNITIES

Additional access and amenity improvements hold much potential for creating an even more complete water trail on Humboldt Bay. These opportunities were identified by the public as important components of a Humboldt Bay WTP, but will require additional and multi-jurisdictional planning efforts.

A. Access Sites

The Elk River Wildlife Sanctuary

The City of Eureka is currently in the permitting process and is seeking funding to improve coastal and paddling access at this site. For boaters, this is a non-motorized beach launch/access point; no structural improvements are recommended. The project will establish a formal parking area near the bend in Hilfiker Lane, develop a trail segment that connects to Truesdale Street and existing trails along the southern portion of the Sanctuary, and will improve landscaping. The City also proposes interpretive signage at the water access point. Previously completed planning documents that address paddling access for the Elk River Wildlife Sanctuary include the 2002 Elk River Access Project Recommendations (http://www.naturalresourcesservices.org/eureka-elk-river-trail-plan.html) and the 2005 Waterfront Trail & Promenade Recommendations (http://www.naturalresourcesservices.org/eureka-waterfront-trail-and-promenade-recommendations.html).



Path to existing beach access at Elk River Wildlife Sanctuary.



Beach access near old pilings.

The Humboldt Bay Rowing Association/HSU Crew Dock

This facility is located near the Samoa Bridge, and provides good paddle-boat access to the Eureka Waterfront and nearby sloughs. There is parking nearby and a floating dock to accommodate a wide range of non-motorized boaters. Currently, the Humboldt Bay Rowing Association (HBRA) is in the process of acquiring this facility from Center Activities/HSU. The HBRA is a 501(c)(4) public non-profit organization, and is seeking funding and other assistance to complete the transfer of ownership. They will maintain the dock facility for public access, and will serve as the practice facility for part of the HSU crew team. As the transfer of ownership takes place, installing water trails interpretive signage should be considered as part of the process.

Mad River Slough (255 Bridge and Ma-l'el Dunes)

Opportunities

The local paddling community consistently identifies the Mad River Slough as one of the premier paddling destinations on Humboldt Bay. Currently, there is a popular yet informal access site at the SR 255 Bridge, which would be an ideal site for official paddling access improvements. The Mad River Slough is one of the small number of launch sites into Arcata Bay and provides excellent opportunities for non-motorized boaters. It is also an excellent site for non-motorized boat uses because it is a multi-use site: fishers often cast off of the bridge, along with a variety of non-motorized boaters.



Unofficial non-motorized boat access on the west side of the SR 255 Bridge.

Constraints

The primary access point is very problematic, and cannot realistically support an increase in paddling activities as is for a number of reasons. The project team reviewed the parcel maps extensively at and around the bridge site. Current landownership makes planning difficult and beyond the scope of this project, as private, state, and governmental agencies all own property along the slough and land access is restricted. Sensitive resources also exist in many places in the slough, as do commercial mariculture operations. Overcoming traffic hazards associated with the close proximity of State Route 255 is challenging and would likely require significant study and adjacent landowner participation. Currently, there is enough space to safely park approximately two vehicles, but there are frequently more. Restrooms are another amenity that would be a good addition to the site, however, it is unknown what type of impact this would have. Further, agreements would have to be reached regarding maintenance of the facilities. While not a priority access site for Phase I of the WTP, this site should be explored further during future phases as it is consistently identified by the public as a priority.

Park Street/Target Site Boat Launch/Northcoast Regional Land Trust

Opportunities

The Target boat ramp gives non-motorized boaters access to the Eureka and Freshwater Sloughs. This site, a currently unofficial access site at Park Street, and land managed by the Northcoast Regional Land Trust (previously owned by Freshwater Farms), located on the Freshwater Slough, all potentially provide good access to the Eureka and/or Freshwater Slough channels. Collectively, they represent an opportunity to strategically plan for a 'destination' area of Humboldt Bay. It is roughly a daylong round trip paddle from the Target site to the NRLT site, with Park Street in the middle, potentially serving as a resting point, or a place to put-in/take out for shorter paddling trips.

Constraints

There are currently no public facilities east (up-slough) of the Target site, which is increasingly problematic for paddlers (and presumably slough-adjacent landowners). Park Street in particular is mostly privately owned property, although the Humboldt Bay Harbor, Recreation, and Conservation District does have an easement adjacent to slough access. Without official access points, paddlers trespass onto the channel banks or other private property in order to rest or to find adequate shrubs/bushes for those necessary calls of nature. Without appropriate contacts and understandings with private landowners, increased paddling

use of these sites cannot be supported. Additional surveys/research are also needed to determine the potential environmental impacts from increased paddling in these slough channels.

Manila Community Park

This park, east of Samoa 255 in Arcata Bay, and is managed by the Manila Community Services District. This site provides a variety of recreational amenities, including restrooms, bird watching, and camping. Currently, there is no developed paddling access at the site or adjacent parking, but its geographic location is desirable for paddlers in Arcata Bay. The site has no low-tide access and high-tide access is problematic due to the expansive mudflats and shallow water depth, so further coordination and planning is necessary to determine the feasibility of improving this access site. Interpretive and directional signage should be included in any improvement plan.

B. Regional/Bay-Wide Water Trails Projects

Also identified as being public priorities (and no less so than those identified above), the future opportunities also will require additional and multi-jurisdictional planning efforts.

Regional Water Trails Plan

There has been much interest in widening the scope of water trails planning to include areas such as the Eel River (and estuary), the Mad River (and estuary), Trinidad Harbor, and the Humboldt Lagoons (Big, Freshwater, and Stone). Regional planning efforts could help situate the North Coast as a premier paddling destination for both residents and visitors alike.

Camping

Camping opportunities on Humboldt Bay, particularly for non-motorized user groups, are few, yet consistently desired as a recreational amenity. The Samoa County Boat Ramp is the only site that currently offers camping opportunities. Future bay improvement projects by a variety of jurisdictions should attempt to incorporate camping facilities where appropriate, providing non-motorized (canoes, kayaks, etc.) as well as vehicular camping opportunities.

Bay-wide Channel Markers

Channel markers could help identify designated paddling routes and low-tide channels, as well as put-in/take out sites. However, there are a number of issues associated with these markers, including maintenance responsibility, jurisdictional ownership/management of bay and channels, conflicts with other bay user-groups, and actual marker designs/functions.

Non-Motorized Boating Website

As the digital age enables more people access to more information by computer, a comprehensive regional non-motorized boater website could provide boaters with a much needed resource. Ideally hosted and maintained by a local paddling club or resource agency, the website could include:

- Safety information;
- Education regarding the multiple uses on the Bay (such as kayak fishing, waterfowling, recreational paddling, and so forth);
- Locations of sensitive species on the Bay and tips on how to avoid and/or mitigate impacts, as well as seasonal migration patterns for birds and other species that rely on the Bay;
- Information and photos about invasive species and how to prevent their presence;

- A forum for paddlers to communicate regarding boating tips and to provide updated information on invasive species location;
- Links and contact information for local outfitters and clubs/organizations (for multiple uses of the Bay).

VII. PERMITTING AND CONSTRUCTION NEEDS AND COSTS

A. Permitting

Below are estimated costs for permitting of Phase I of the WTP. It is anticipated that each permit will cover all construction activities associated with the WTP (four access areas). This will be more efficient, in terms of cost and time, than obtaining separate permits for each construction project. It is also anticipated that the HBHRCD will be the project proponent and Lead Agency for CEQA. The cost estimates are based upon the permits that are most likely to be required. However, as the project progresses, different permits may be needed. All costs are estimated based on 2008 dollars.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) COMPLIANCE

It is assumed that completion of a Negative Declaration or a Mitigated Negative Declaration will be an adequate environmental document to satisfy CEQA requirements.

Humboldt Bay Harbor Recreation and Conservation District

The Harbor District is assumed to be the Lead Agency. The Lead Agency will review, circulate and comment on CEQA documentation, hold public meetings, and adopt the CEQA document if appropriate.

-Estimated Cost (40 hours staff time @ \$100/hour): \$4000

Contractor

A contractor will prepare the environmental document, attend approximately two meetings and make revisions to the environmental document based upon agency and public comments.

-Estimated Cost: \$9,500 (fee does not include a cultural resources survey)

Permit Fees

California Department of Fish and Game Code Section 711.4 Negative Declaration Filing Fee: \$1,876.75.

Approximate Total Costs for CEQA Compliance: \$15,376 (rounded to \$15,500 hereafter)

CALIFORNIA COASTAL COMMISSION, COASTAL DEVELOPMENT PERMIT

Contractor

A contractor will prepare the permit application and respond to comments from the California Coastal Commission.

-Estimated Cost: \$3,400

Permit Fee

-Waived because the Harbor District (a public agency) will be the project proponent.

Approximate Total Cost for Coastal Development Permit: \$3,400

ARMY CORPS OF ENGINEERS, CLEAN WATER ACT SECTION 404 AND RIVERS-AND-HARBORS ACT SECTION 10 PERMITS

Contractor

A contractor will prepare the permit applications and respond to comments from the Army Corps of Engineers. If there is any doubt that the construction will cause the need for Army Corps permits, project proponents should engage in a pre-application process with the Corps (not included in cost estimate).

-Estimated Cost: \$3,300

Approximate Total Cost for Army Corps of Engineers Permits: \$3,300

REGIONAL WATER QUALITY CONTROL BOARD, CLEAN WATER ACT SECTION 401 WATER QUALITY PERMIT

Contractor

A contractor will prepare the permit application and respond to comments from the Regional Water Quality Control Board.

-Estimated Cost: \$3,000

Permit Fee

Approximate fee assuming low impact discharges is \$500.

Approximate Total Cost for Section 401 Permit: \$3,500

COORDINATION WITH LOCAL AGENCIES

Coordination with the City of Arcata and County of Humboldt, which may include the need to obtain grading or other permits.

Approximate Total Cost for Interagency Coordination: \$1,000

INFORMAL CONSULTATION

It is assumed that "informal" consultation with NOAA Fisheries and the U.S.F.W.S. will be adequate verses formal consultations). Issues include listed salmonids and tide-water goby.

Approximate Total Cost for Informal Consultation: \$2,500

TOTAL ESTIMATED COSTS FOR PERMITTING THE WTP, PHASE I

Permit	Cost
California Environmental Quality Act Negative Declaration or Mitigated Negative	\$15,500
Declaration	·
California Coastal Commission, Coastal Development Permit	\$3,400
Army Corp of Engineers, Clean Water Act Section 404 Permit and Rivers-and-	\$3,300
Harbors Act Section 10 Permits	
Regional Water Quality Control Board, Clean Waters Act Section 401 Permit	\$3,500
Interagency Coordination	\$1,000
Information Consultation – NOAA & USFWS	\$2,500
TOTAL	\$29,200
Total with 15% Contingency	\$33,580

B. Construction

Estimated construction costs are included for WTP Phase I priority access sites that will require significant site and/or dock modifications. Since it is recommended that improvements to Hookton Slough and Elk River Wildlife Sanctuary be interpretive signage, their specific costs were not calculated. Signage cost estimates are assumed to be close to those elements identified for Arcata Marsh, Woodley Island, and Fields Landing in Appendix F.

VIII. POTENTIAL FUNDING SOURCES

The greatest source of funding will likely be state and federal grants. The following government funding sources typically fund projects such as water trail improvements:

- California Department of Boating and Waterways Boat Launching Facility and Marina Grants;
- California Wildlife Conservation Board Grants;
- State Coastal Conservancy;
- National Park Service Land and Water Conservation Fund;
- Federal Highway Administration Recreational Trails Program;
- The Compton Foundation;

Funding may also be made available: by local jurisdictions or special districts (e.g., City of Eureka, City of Arcata, County of Humboldt, and the Humboldt Bay Harbor Recreation and Conservation District); when other projects mitigate their impacts by funding water trail improvements in Humboldt Bay; or through private companies which sell boating related equipment providing small grants for water trail improvements. It is likely that future phases of the WTP will be funded through matching grants and in kind contributions from more than one source.

X. REFERENCES

Black, Jeffrey. Humboldt State University professor. Personal communication. November 2007

Lancaster, Dave. Department of Fish and Game Wildlife Biologist. Personal communication. October 2007.

San Francisco Bay Conservation and Development Commission (BCDC). Background Report on Wildlife, Habitat and Water Quality Issues, 2006.

X. APPENDICES

- A. Sensitive Resources Impact Assessment
- B. Interpretation Materials

Bay Sign

Directional Signage Plan

Map and Guide

- C. Site Assessments
- D. Public Outreach Humboldt Bay Symposium and Stakeholder Presentation
- E. Online Survey and Results
- F. Construction Cost Estimates